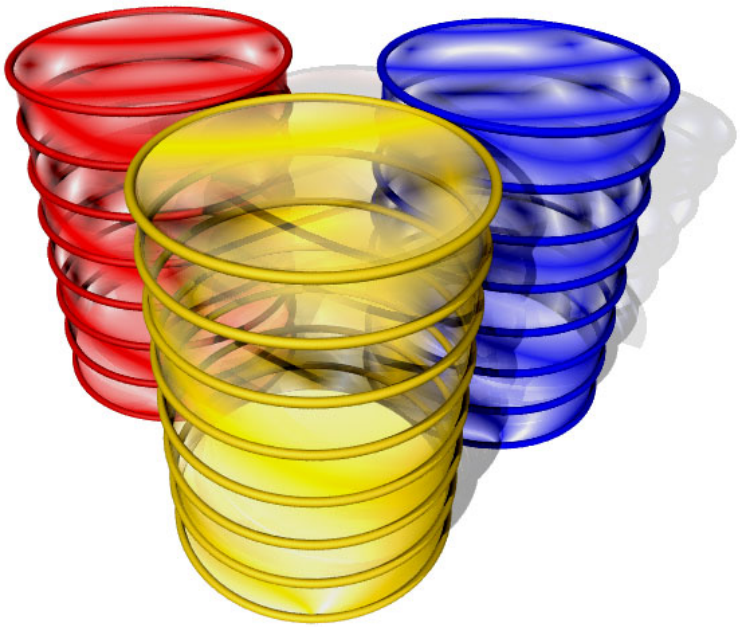
SQL Developer

User Manual



Version 2.1.0

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1 Preface

SQL Developer is a powerful SQL client for querying and administration of databases. The application has been completely implemented in Java and therefore runs on any platform supporting a Java Runtime Environment (Version 1.4 or higher).

In principal SQL Developer supports any database providing a JDBC driver. With the JDBC-ODBC-bridge driver from Sun you are can also connect to data sources via the ODBC driver.

SQL Developer homepage

http://sqldeveloper.solyp.com/

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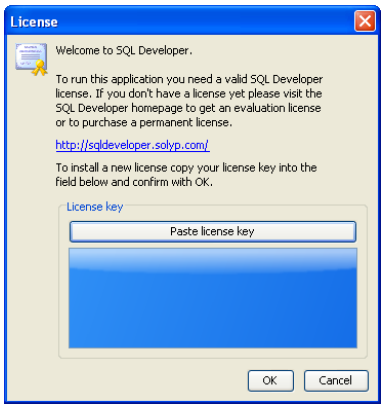
2 Getting Started

This chapter describes how to get started with SQL Developer and what you should do before the first use.

2.1 License Registration


License
Welcome to SQL Developer.
To run this application you need a valid SQL Developer license. If you don't have a license yet please visit the SQL Developer homepage to get an evaluation license or to purchase a permanent license.
http://sqldeveloper.solyp.com/
To install a new license copy your license key into the field below and confirm with OK.
License key
Paste license key
OK
Cancel

Right after having started SQL Developer the first time you should register your license in the license dialog. Only with a registered license you can use all functions of SQL Developer.

First save your SQL Developer license to your computer. To avoid unauthorized access to your license you should copy the license to your personal user directory.

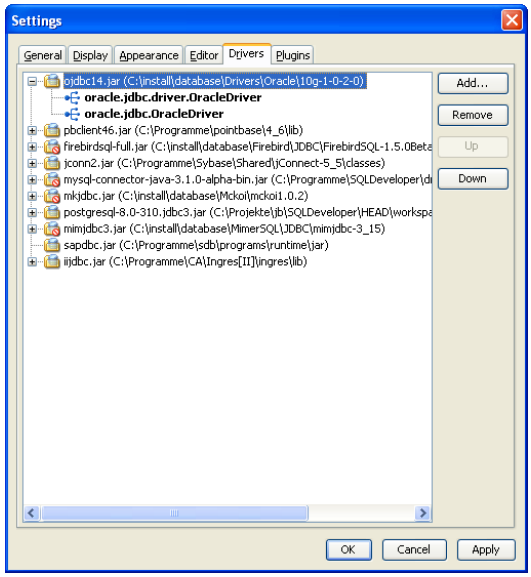
Select the *License* item in the *Help* menu to open the registration dialog.

Copy your license key and paste it into the *License key* field in the lower half of the dialog. After this confirm with *OK*.

SQL Developer is registered now and all functions are available.

2.2 Configure Database Drivers

To access a database SQL Developer must have a suitable JDBC driver installed. Usually JDBC drivers for a database can be downloaded from the internet site of the database vendor for free. In most cases the driver files have the extender JAR (Java Archive) or ZIP (mainly older drivers).



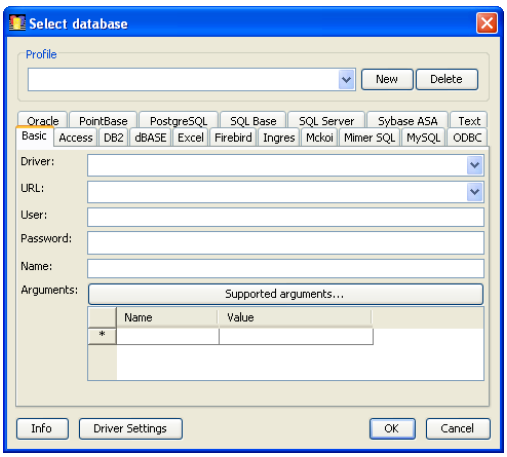
Select the *Settings* item from the *Extras* menu. Click on the *Drivers* tab.

This tab shows all drivers currently available. With the *Add* button you can open the file selection dialog for driver files. Select the previously downloaded driver and confirm with *OK*.

Now the driver is shown in the tree and can be used.

2.3 Establishing Connections

Select the *Open connection* item from the *File* menu. The *connection dialog* shows all available connectors arranged in tabs.



The *Basic* connector provides the most flexible way to establish a database connection. At least you need to specify a driver (class) name and a URL. Details on both parameters can be found in the vendor's driver manual.

All other tabs contain specialized connectors for various databases. Use the *Info* button to check if the driver required for a specialized connector is already available. You can edit the *Driver Settings* directly from the connection dialog to add missing drivers.

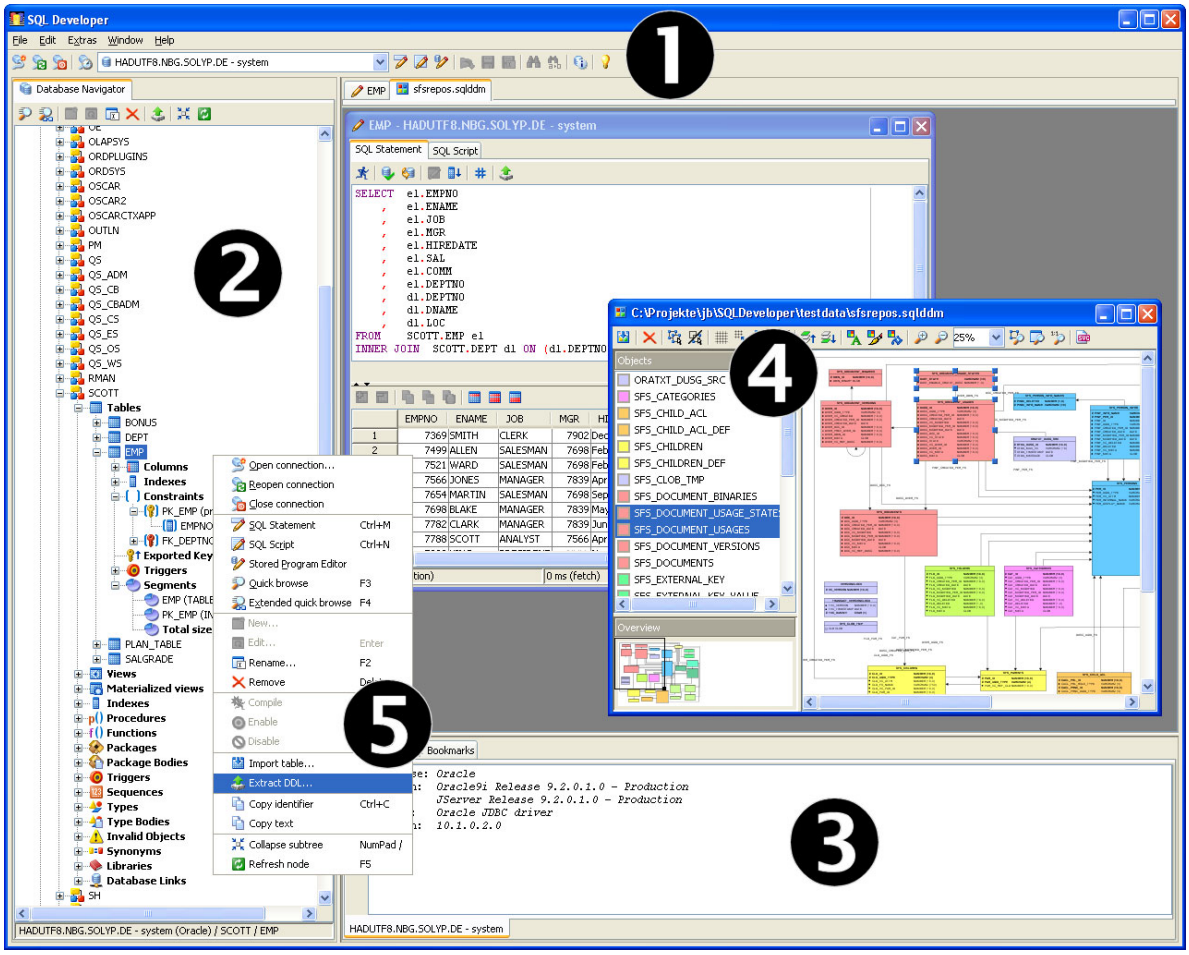
Click the *OK* button to confirm the settings for the current tab and to establish a new database connection.

3 Desktop

The desktop of the application consists of the following components:

1. Main menu and tool bar
2. Database Navigator
3. Output window and Bookmarks
4. MDI (Multiple Document Interface) window area
5. Context menus

Some components (Database Navigator, output window and bookmarks) can be individually positioned on the desktop by the user. Click on the tab of the component to move and drag the component to its new target position.



3.1 Main Menu

The main menu is located at the upper border of the application window. The submenus and menu items of the main menu are described below.

3.1.1 File

Open connection...	Opens the *connection dialog*.
Reopen connection	Closes the currently selected connection and opens it again. With this function you can reactivate aborted connections (e.g. aborted by time out).
Close connection	Closes the currently selected connection.
Recently opened connections	Shows a list of the most recently opened connections.
Open...	Reads a file into the active editor window. This function gets available after an editor window has been opened for a connection.
Save	Writes the content of the active editor window to a file. This function is available after an editor window has been titled with a filename (after an *Open* or *Save as* operation).
Save as...	Writes the content of the active editor window to a file with a new filename. This function gets available after an editor window has been opened for a connection.
New diagram	Opens a new *Diagram Editor*.
Open diagram...	Opens a diagram file.
Save diagram	Writes the current diagram to a file. This function is available after an editor window has been titled with a filename (after an *Open diagram* or *Save diagram as* operation).
Save diagram as...	Writes the current diagram to a file with a new filename.
Print...	Prints the content of the active window.
Exit	Exits the application. All open connections are closed automatically.

3.1.2 Edit

SQL Statement	Opens a new editor window for single SQL statements on the current connection.
SQL Script	Opens a new editor window for SQL scripts on the current connection.
Stored Program Editor	Opens a new editor window for stored procedures on the current connection.

Find...	Opens the *Find* dialog.
Replace...	Opens the *Replace* dialog.

Go to line...	Jumps to the specified line in the active editor window.
Toggle comment	Comments or uncomments the selected lines of an SQL statement.
Convert to upper case	Converts the selected text range to upper case characters. Example: foo_bar » FOO_BAR
Convert to lower case	Converts the selected text range to lower case characters. Example: FOO_BAR » foo_bar
Convert to mixed case identifier	Converts SQL identifier within the selected text range to mixed case identifiers. Example: FOO_BAR » fooBar
Convert to upper case identifier	Converts mixed case identifier within the selected text range to SQL identifiers. Example: fooBar » FOO_BAR
Enclose in quotes	Encloses the complete or the selected text range in quotes.
Remove enclosing quotes	Removes the quotes from the complete or the selected text range.

Char map	Opens the char map for input of special Unicode characters.

Encoding	Displays and allows the change of the text encoding for the active editor window. The encoding is determined automatically when opening a file. The selected encoding is used for all save operations.

3.1.3 Extras

Database info...	Opens the *Database info* dialog.
Catalog/Schema Comparison...	Opens the standard extension for *Catalog/Schema Comparison*.
Dissolve dependencies...	Opens the standard extension for *Dissolving dependencies*.
<Extensions>	At this position SQL Developer provides access to all vendor specific extensions.
Settings...	Opens the *Settings* dialog.

3.1.4 Window

Cascade	Arranges all windows (excluding the navigator and output window) on the desktop by overlapping them.
Tile vertical	Arranges all windows (excluding the navigator and output window) on the desktop as tiles in a vertical orientation.
Tile horizontal	Arranges all windows (excluding the navigator and output window) on the desktop as tiles in a horizontal orientation.
Close all	Closes all windows (excluding the navigator and output window).
<Windows>	At this position you find a list of all open windows.

3.1.5 Help

Tip of the day...	Shows the *Tip of the day*.
License...	Opens the license dialog to register SQL Developer.
SQL Developer Homepage...	Opens a web browser and navigates to the SQL Developer homepage.
About SQL Developer...	Shows general information about SQL Developer.

3.2 Tool Bar

The *tool bar* is located below the main menu and provides access to a number of important functions.

Within the tool bar you find a dropdown list showing all open database connections. You can switch to another connection than the current simply by selecting an entry from the list. The list automatically switches if a connection is selected indirectly by the database navigator or an editor window. Opening a new editor window always connects to the database shown as the current connection in the list.

3.3 MDI Window Area

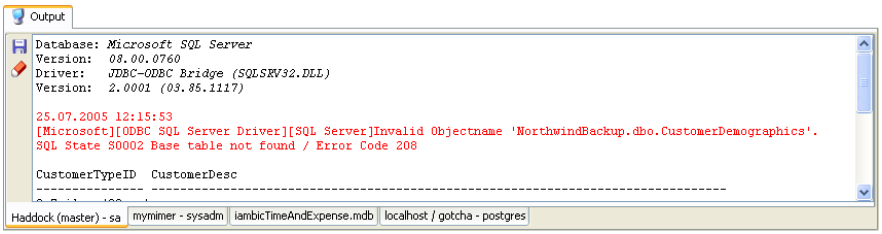
All SQL editors and non-modal windows are displayed in the MDI (Multiple Document Interface) window area.

The window area itself is not movable within the desktop but you can arrange other movable components (Database Navigator, output window etc.) around.

The window bar is shown automatically at the upper border when a window has been opened. Each new window is displayed in the bar in its own tab. Click on the tabs to switch between the windows. The window bar display (shown or hidden) can be configured in the *settings dialog*.

3.4 Output Window

The *output window* provides a tab for each database connection. If a connection produces output (e.g. when executing a SQL script or if an error occurs) it is shown in the output window tab for that connection.

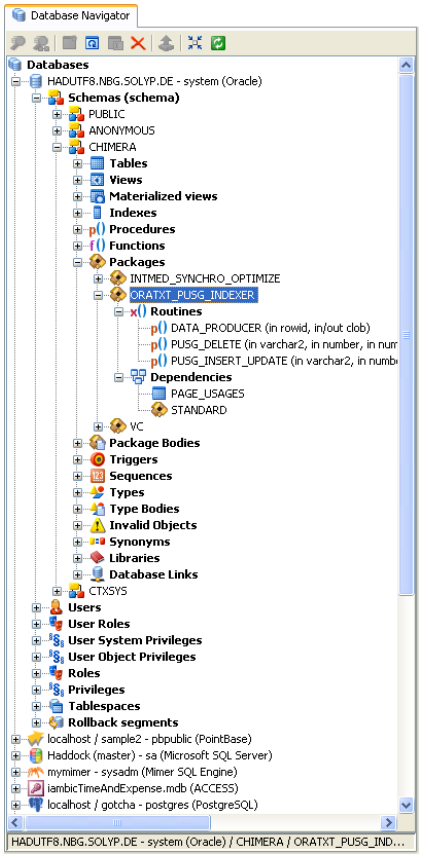


The component can be moved within the desktop by using the tab on the upper border.

Use the tool bar or the context menu (right mouse button) to clear the protocol or to save it to a file.

4 Database Navigator

The *database navigator* shows all connected databases in a tree view and provides access to single database objects like tables, views and users. Grouping tree nodes are rendered bold (*Tables*, *Views* etc.). Which database objects are available in detail depends on the connected database.



The component can be moved within the desktop by using the tab on the upper border.

Use the tool bar of the window to call often used functions for the database navigator. You can access the complete set of functions via the context menu (right mouse button).

At the bottom border a status bar shows the currently selected path in the tree.

4.1 Objects

The following objects are a part of the database objects supported by SQL Developer. The actual number of objects depends on the connected database.

- Databases (Root)
- Schema
- Catalog
- User
- User group
- Table
- Temporary table
- View
- Materialized view / Snapshot
- Table / View column
- Table column with primary key
- Table column with foreign key
- Table column with primary and foreign key
- Index
- Index column
- Function
- Procedure
- Synonym
- Constraint
- Primary key constraint
- Foreign key constraint
- Unique key constraint
- Check constraint
- Trigger
- Sequence / Generator
- Library
- Tablespace
- Package / Module
- Type
- Role
- Invalid object
- Privilege
- Dependencies

4.2 Commands

Open connection...	Opens the *connection dialog*.
Reopen connection	Closes the currently selected connection and opens it again. With this function you can reactivate aborted connections (e.g. aborted by time out).
Close connection	Closes the currently selected connection.
SQL Statement	Opens a new editor window for single SQL statements on the current connection.
SQL Script	Opens a new editor window for SQL scripts on the current connection.
Stored Program Editor	Opens a new editor window for stored procedures on the current connection.
Quick browse	Opens a new editor window for single SQL statements on the current connection and presets the input area with a SELECT statement for the selected table or view.
Extended quick browse	Opens a dialog for the fast creation of joined queries on tables.
New...	Creates a new database object as a child of the selected object type.
Edit...	Modifies the selected database object.
Rename...	Modifies the name of the selected database object.
Remove	Removes the selected database objects.
<Extensions>	At this position SQL Developer provides access to database specific extensions (where applicable).
Extract DDL...	Creates a DDL script for all selected database objects.
Copy identifier	Copies the physical identifiers of the selected database objects to the clipboard.
Copy text	Copies the identifiers of the selected database objects (as shown in the database navigator) to the clipboard.
Collapse subtree	Collapses the subtree of the selected database object on all levels.
Refresh node	Refreshes all children of the selected tree node.

4.2.1 Quick Browse

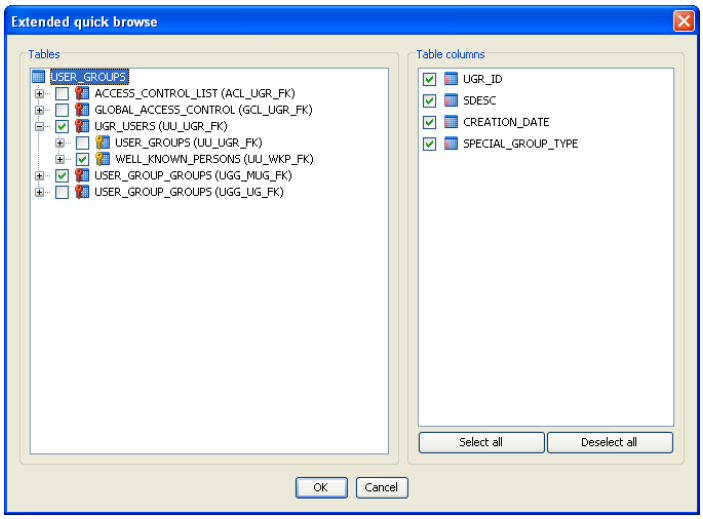
This function is used for the quick creation of simple SQL queries.

Select a table or a view from the database navigator and perform the function to open a new editor window for single SQL statements. The function initializes the text input area with a SELECT statement for the selected relation. You can execute the query as usual..

4.2.2 Extended Quick Browse

The extended quick browse function provides a simple way to create joined queries on tables.

Select a table from the database navigator and perform the function to open the query builder dialog.



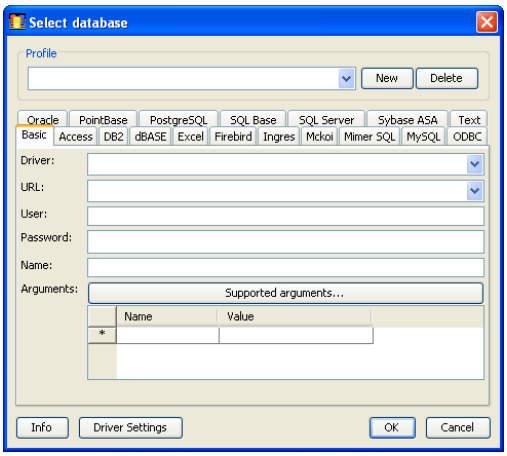
The tree view on the left side shows the foreign key relations between the tables. The root node represents the initially selected table. The children of a node are those tables joined to the parent node by foreign key relations.

Subsidiary table entries are displayed with their table name followed by the foreign key name joining the table with the parent node. A symbol with a yellow key indicates that a foreign key is defined by the parent node, referencing the primary key of the child node (parent:child = n:1). A red key indicates that a foreign key is defined by the child node table and references the primary key of the parent node (parent:child = 1:n).

All checked tables are included in the SELECT clause of the statement to create. You can determine the table columns to be included on the right side. By default all columns of a checked table are selected.

When you confirm with OK, a new editor window for SQL statements is opened and the text input area is initialized with the generated SELECT statement.

5 Connection Dialog



The connection dialog is accessible through the *File* menu and the *Open connection* command.

For each new connection SQL Developer creates a profile that is displayed in the dropdown list in the upper part of the dialog. When the user selects a stored profile the connector described by the profile gets selected and its fields are preset.

To create a new connection select a suitable connector first. All available connectors are displayed as tabs. Except for the *Basic* connector the required drivers for a connector are predefined.

Press the *Info* button to show the information about the driver (name, driver class, vendor, URL and status). If a required driver for the selected connector is not available this is shown by the *status* field.

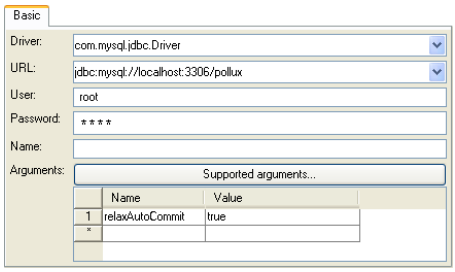
You can add missing drivers directly from the connection dialog. Use the *Driver Settings* button to add a new driver. The opening dialog shows the *Drivers* tab of the des *Settings* dialog.

After you have specified the parameters for the selected connector you can create a new connection by pressing the *OK* button.

5.1 Basic Connector

The *Basic* connector is a universal connector creating connections with any JDBC driver. All other connectors are specialized connectors for certain databases.

Note: If a specialized connector exists for your database you should prefer that connector because its configuration will be much easier.

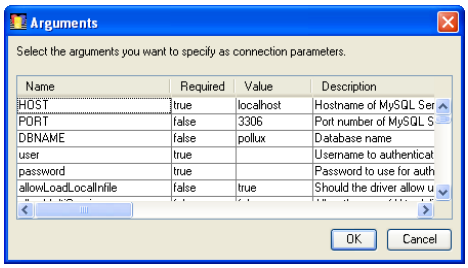


To create a connection with the *Basic* connector you have to specify at least a *driver* and a *URL*. You can get both parameters from the driver documentation of the vendor. Both fields are editable dropdown lists providing preconfigured values you can use for various popular databases.

The parameters for *user* and *password* are required for the most databases also. For this reason they are displayed as two additional fields.

The *name* field is optional and enables you to enter a profile name manually. If the field is left empty SQL Developer automatically generates a name for the connection.

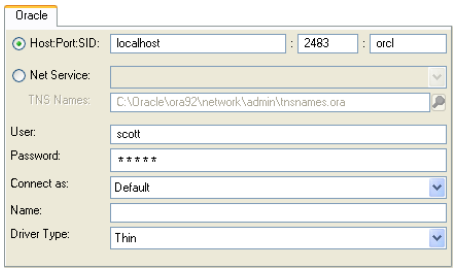
In the *arguments* table you can define additional connection parameters as *name/value* pairs. The table expands automatically when entering a name in the first column. To remove a *name/value* pair just delete the name in the first column of the desired entry.



Some drivers provide information about their supported *arguments*. Press the *Supported arguments* button to show them in the *Arguments* dialog and to copy selected arguments to the table.

5.2 Oracle Connector

The *Oracle* connector supports connecting the server by specifying *Host* (name or IP-address), *Port* and *SID* or a *Net Service* definition from a *TNS Names* file.



To use *Net Service* definitions you must specify a *TNS Names* file providing the definitions. Usually the file is installed together with an Oracle server or Oracle client in a subfolder of the *Oracle Home* directory in the path `<Oracle Home>/network/admin`.

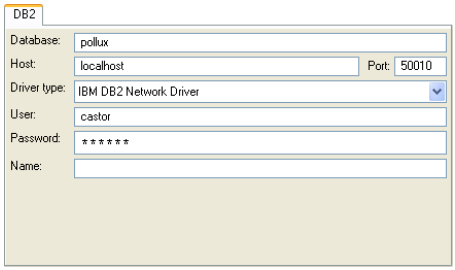
In any case you must specify the *user* (name of the Oracle schema) and the *password*. With the field *Connect as* you can choose if the user acts as a *Standard* user, as *Operator (SYSOPER)* or as *DBA (SYSDBA)*. The last two options are only applicable for the *SYS* user.

The *name* field is optional and enables you to enter a profile name manually. If the field is left empty SQL Developer automatically generates a name for the connection.

For the *driver type* to be used you can choose between the *Thin* driver (recommended) and the *OCI* driver. The *Thin* driver does not require any special client installation, the *OCI* driver is only available if you have an *Oracle client* installed.

5.3 IBM DB2 Connector

Use the fields *Database*, *Host* (name or IP-address) and *Port* to address the server you want to create a connection with.

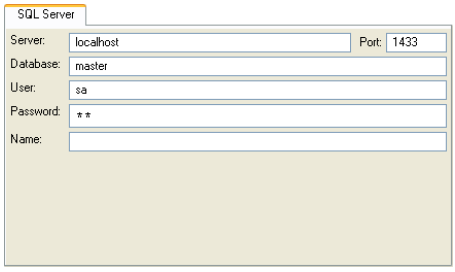


The connector for IBM DB2 databases uses two different *driver types* to create connections: The *network* driver and the *application* driver. Press the *Info* button in the *connection dialog* to test if the required is available.

The fields *User* and *Password* define the authentication parameters.

5.4 Microsoft SQL Server Connector

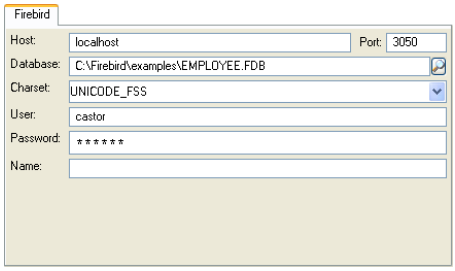
The Microsoft SQL Server connector uses the JDBC-ODBC-Bridge driver. To establish connections you need the Microsoft SQL Server ODBC driver to be installed on your computer.



With the fields *Server* (name or IP-address), *Port* (default port is 1433) and *Database* (name of the catalog) you define the connection parameters.

The fields *User* and *Password* define the authentication parameters.

5.5 Firebird Connector



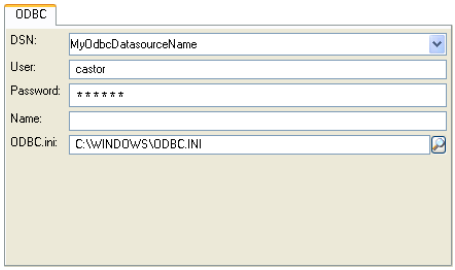
The *Firebird* connector has been developed for Firebird Version 1.5. With the fields *Host* (name or IP-address) and *Port* you address the server you want to establish a connection to. Use the *Database* field to specify the physical name of the database to open or an alias name known by the server.

The fields *User* and *Password* define the authentication parameters.

5.6 ODBC Connector

The *ODBC* connector has been invented for Windows systems to works with databases using the ODBC interface (**O**pen **D**ata**b**ase **C**onnectivity).

Windows manages its data source names (DSN) in a text file named *odbc.ini* in the Windows directory. These names are used to create ODBC connections by name. Before the first use of this connector specify the path of that file for your system in the *ODBC.ini* field. SQL Developer automatically extracts all registered data source names and shows them in the *DSN* field.



To create a connection select the desired entry in the *DSN* field. Optionally you can also input a data source name manually.

The fields *User* and *Password* define the authentication parameters.

6 SQL Editors

SQL Developer supports three kinds of SQL editors. Statement, script and procedure editors. Each editor window has its own connection, its own transaction and can perform *Commit* and *Rollback* commands.

An editor window always uses the current adapter shown in the dropdown list in the tool bar to create its connection. After opening the editor you can use the *Open* menu item to load the content of a file into the editor. The filename is automatically used for the editor's window title.

There are two ways to save the content of an editor window:

- If the content has been loaded from a file or has already been saved to a file, use the *Save* command from the *File* menu.
- Select the *Save as* command from the *File* menu if you have created a new content from the scratch or if you want to store the content with a new filename.

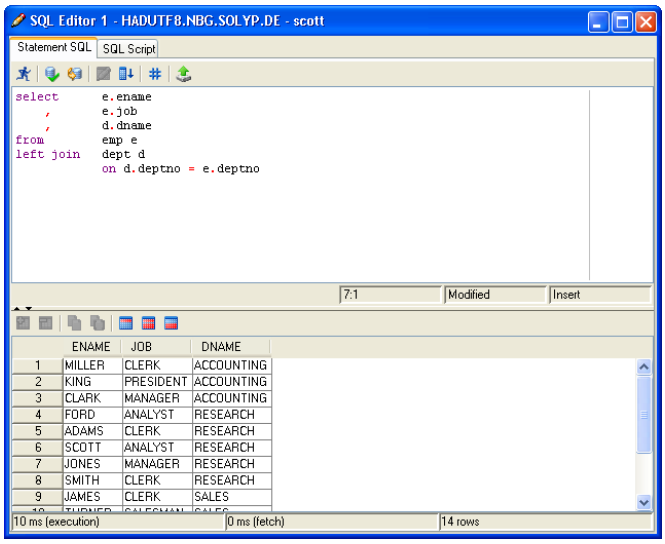
Above the input area of each editor window you find a tool bar providing all commands for that editor. You can also use the context menu (right mouse button) to access these commands.

Note: When closing an editor window a *rollback* is performed automatically on the connection. All *uncommitted* changes will be discarded.

Each editor supports an *undo* and a *redo* function. The *undo* function can be accessed by pressing *Ctrl* + *Z*, press *Ctrl* + *Y* to redo text changes.

6.1 Statement Editor

The *Statement Editor* is used to execute a single statement. The content of the editor window is sent to the database at once.

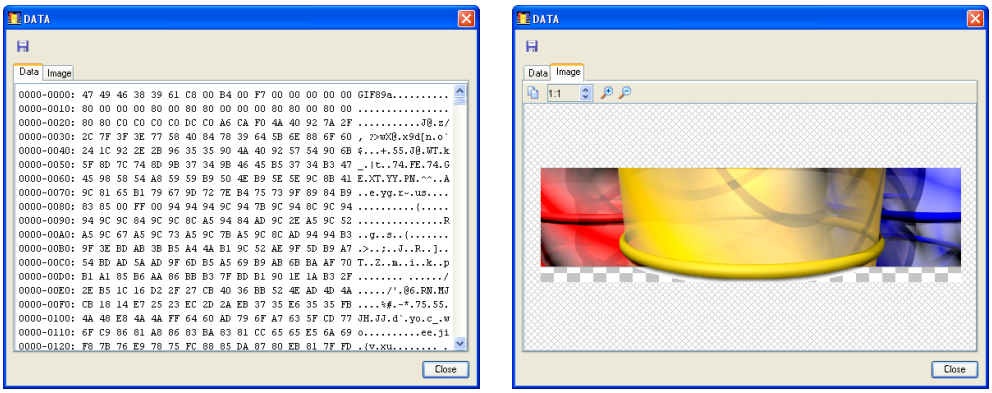


The result is visualized as a table in the lower part of the editor window. Each table cell displays a single value from the result set. Because of their size, LOBs (Large OBjects) are displayed partially or as a link. CLOBs (Character LOBs) and BLOBs (Binary LOBs) are shown with their type name and size only. To view the content of such an object select its table cell an click the arrow symbol shown within the cell.

6.1.1 BLOB Viewer

The BLOB viewer displays any kind of binary data in a combined hexadecimal and ASCII view. Use the *Save* button from the tool bar to save the BLOB to your local computer.

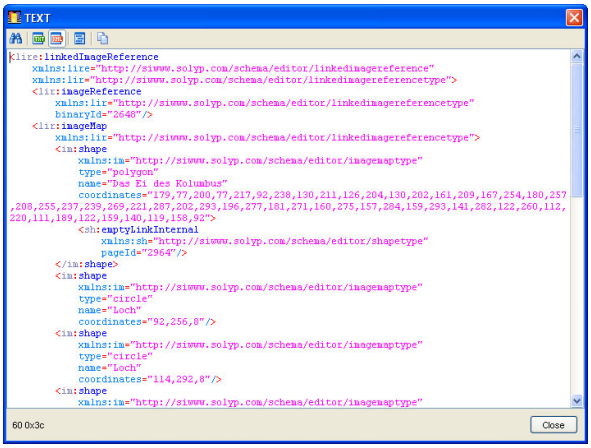
If the current BLOB is a picture, you can view it by changing to the *Image* tab. The supported formats are JPEG, GIF and PNG. For BLOBs with different format no picture is shown.



BLOB viewer with hexadecimal and image view

6.1.2 CLOB Viewer

The CLOB viewer displays textual content and supports unformatted text and XML. If the current text is XML encoded, the viewer automatically changes to the XML view mode with syntax highlighting. You can format a XML content for easier reading by using the function from the tool bar.



CLOB viewer with XML syntax highlighting

6.1.3 Commands (Editor)

Execute	Executes the statement.
Commit	Sends a *COMMIT* command to the database and confirms all pending changes.
Rollback	Sends a *ROLLBACK* command to the database and discards all pending changes.
Fetch all	Usually SQL Developer reads the result set of a query in blocks on demand. If this button is pressed, all rows returned by the executed statement are fetched at once.
COUNT(*)	Retrieves the number of rows the current statement would affect.
Export data	Exports the data returned by a SELECT statements to the clipboard or to a file.

6.1.4 Commands (Result Set)

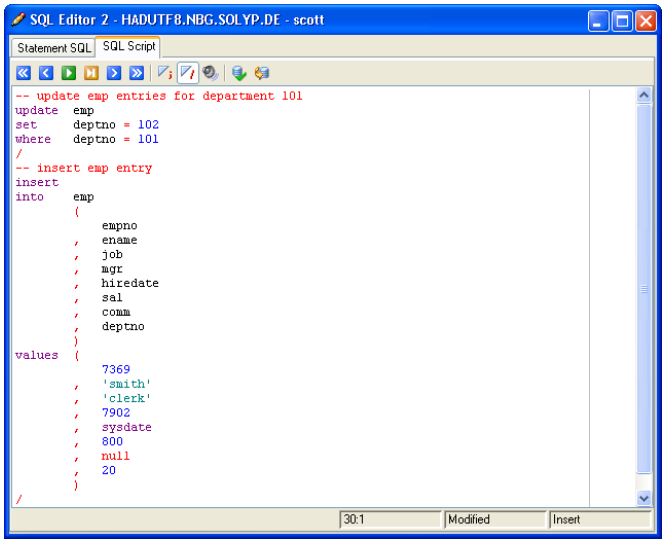
Copy	Copies the selected cells of the table to the clipboard.
Copy column names	Copies the names of the selected table columns to the clipboard.
Copy WHERE clause	Creates a WHERE clause from the selected cells of the table and copies it to the clipboard.
Adjust column width based on header	Adjusts all table columns to match the preferred width of the cells in the table header.
Adjust column width based on header/data	Adjusts all table columns to match the preferred width of the cells in the table header and body.
Adjust column width based on data	Adjusts all table columns to match the preferred width of the cells in the table body.

6.2 Script Editor

The *Script Editor* is used to execute scripts consisting of one or more statements. When executing a script the content of the editor window is being parsed and sent to the database as single statements. The result of each statement is shown in the *output window*.

You can use three different symbols to separate statements in a script:

- Using the keyword GO. Place the keyword at the beginning of a new line.
- The semicolon (;). The terminator must be placed after a statement at the end of a line. **Note:** The processing of this symbol must be activated in the tool bar. The processing is turned off by default.
- The slash (/). The terminator must be placed at the beginning of a new line. **Note:** The processing of this symbol must be activated in the tool bar. The processing is turned on by default.



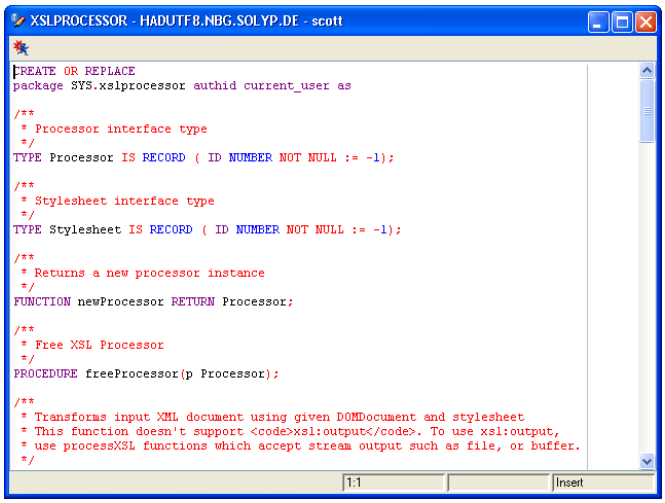
6.2.1 Commands

Skip to start	Places the text caret at the start of the script.
Skip back	Moves the text caret to the start of the previous statement.
Execute	Executes the script beginning with the current statement up to the last statement.
Single step	Executes the statement at the current text caret position only.
Skip next	Moves the text caret to the start of the next statement.
Skip to end	Places the text caret at the end of the script.
Enable semicolon (;) terminator	Turns the processing of the semicolon terminator on or off. Processing is turned off by default.
Enable slash (/) terminator	Turns the processing of the slash terminator on or off. Processing is turned on by default.

Enable output echo	Turns the output echo on or off. If activated each statement is shown in the output window before it is sent to the database for execution.
Commit	Sends the *COMMIT* command to the database and confirms all pending changes.
Rollback	Sends the *ROLLBACK* command to the database and discards all pending changes.

6.3 Stored Program Editor

The *Stored Program Editor* is used to edit stored procedures. To compile a procedure the complete content of the editor window is sent to the database as one block.

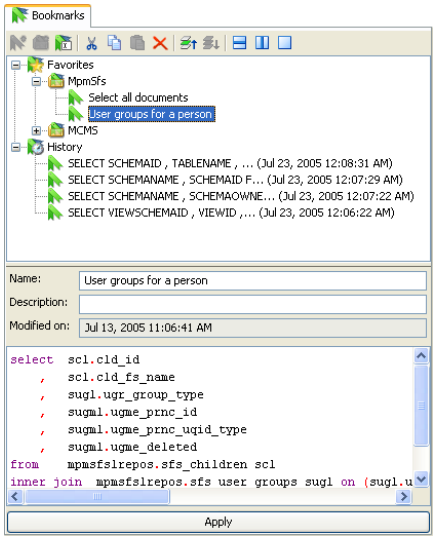

XSLPROCESSOR - HADUTF8.NBG.SOLYP.DE - scott
CREATE OR REPLACE
package SYS.xslprocessor authid current_user as
/**
* Processor interface type
*/
TYPE Processor IS RECORD (ID NUMBER NOT NULL := -1);
/**
* Stylesheet interface type
*/
TYPE Stylesheet IS RECORD (ID NUMBER NOT NULL := -1);
/**
* Returns a new processor instance
*/
FUNCTION newProcessor RETURN Processor;
/**
* Free XSL Processor
*/
PROCEDURE freeProcessor(p Processor);
/**
* Transforms input XML document using given DOMDocument and stylesheet
* This function doesn't support <code>xsl:output</code>. To use xsl:output,
* use processXSL functions which accept stream output such as file, or buffer.
*/
1:1
Insert

6.3.1 Commands

Compile Compiles the procedure.

7 Bookmarks

With the bookmarks component you easily manage frequently used queries and statements.



The component can be moved within the desktop by using the tab on the upper border.

The component is divided into the *tree view* with all existing bookmarks and the *detail view* for a single bookmark.

Underneath the *favorites* folder you can manage your own bookmarks and folders.

The *history* folder always shows the latest executed queries and statements. With the *copy* and *paste* functions you can move bookmarks from the *history* to your *favorites*.

Select a bookmark to show all its information in the *detail view*:

The *name* is also used for displaying the bookmark in the tree. For this reason the name should be as precise and short as possible to identify the bookmark. The *description* is optional. The *modification date* is managed automatically by the application and is only displayed underneath the *history*. In the lower part of the *detail view* you see the actual SQL statement of the bookmark.

Except for the *modification date* you can modify all fields in the *detail view*. To *apply* your changes press the button at the bottom.

To execute the SQL statement of a bookmark copy the statement from the detail view to the clipboard and paste it into an opened SQL editor. Alternatively you can directly drag the bookmark from the *tree view* into a SQL editor.

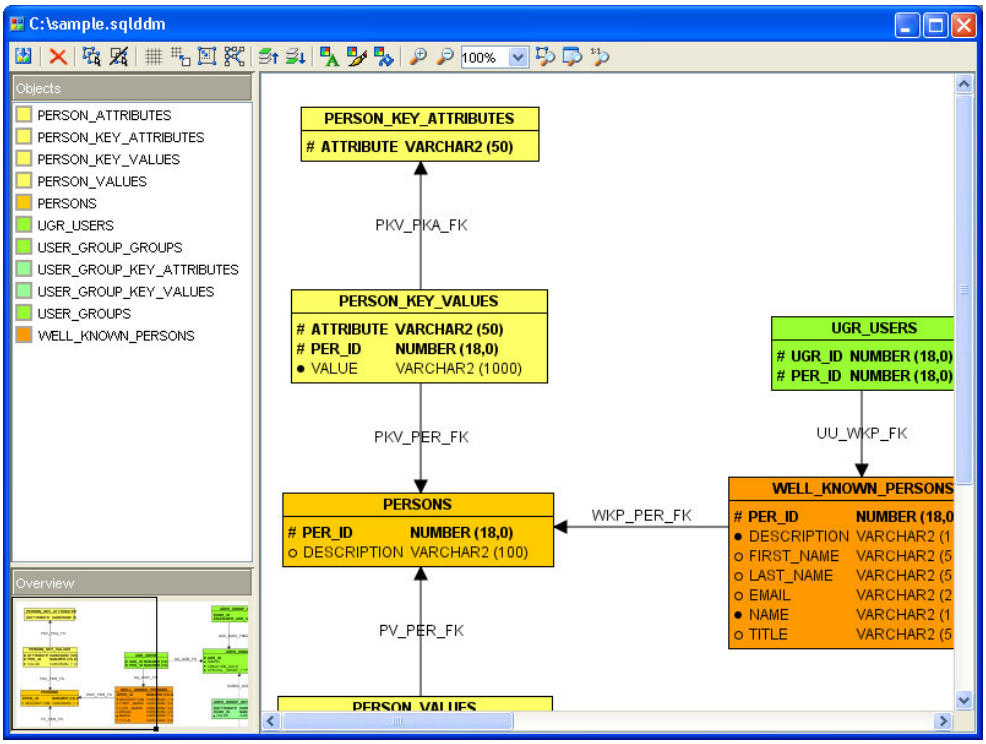
7.1.1 Commands

New bookmark	Creates a new bookmark underneath the selected folder.
New folder	Creates a new folder underneath the selected folder.
Rename	Renames the selected node (bookmark or folder).
Cut	Moves the selected node (bookmark or folder) to the clipboard.
Copy	Copies the selected node (bookmark or folder) to the clipboard.
Paste	Pastes a bookmark or a folder from the clipboard.
Delete	Deletes the selected bookmark or the selected folder including all contained bookmarks and subsidiary folders.
Move up	Moves the selected node (bookmark or folder) within its siblings up by one position.
Move down	Moves the selected node (bookmark or folder) within its

	siblings down by one position.
Split view vertically	Arranges the tree view in the upper and the detail view in the lower half.
Split view horizontally	Arranges the tree view in the left and the detail view in the right half.
Show bookmarks only	Hides the detail view and shows the tree view only.

8 Diagram Editor

With the diagram editor you can visualize database catalogs and schemas. Predominantly the diagram editor is intended to support reverse engineering of existing databases.



Use the *File* menu to create a new diagram or to open or save an existing.

8.1 Components

8.1.1 Object list

The object list shows all diagram objects in ascending alphabetically order. For easy recognition of an object its background color is displayed on the left of each list entry. References between the diagram objects are not shown by this list.

Select one or more objects from the list to perform a function on them. The list selection is always synchronized with the selection of the *diagram view*.

8.1.2 Overview

The overview displays the diagram from the bird's view and shows the visible region of the *diagram view* with a marker frame. You can use the mouse to modify the frame's size and position to control the zoom factor an the visible region of the diagram.

8.1.3 Diagram view

The diagram view shows the diagram objects graphically. Select one or more objects from the view to perform a function on them. The selection is always synchronized with the

selection of the *object list*. A selected object is displayed with a dashed selection border and multiple selection handles.

To select multiple objects click on the background of the diagram view with the mouse and hold down the mouse button. By dragging the mouse cursor you span a rubber band you can use to include the objects to select. When you release the mouse button, the objects inside the rubber band bounds get selected.

Hold down the *Shift* key during selection to add new objects to the existing selection. Hold down the *Ctrl* key to invert the selection state. Selected objects will be deselected and vice versa.

To move an object, click inside the object's bounds, hold the mouse button and drag the mouse cursor.

To change the size of an object, click on a selection handle of the object and drag it to the desired position.

You can add additional vertexes to a connector line between two objects e.g. to create right-angled connectors. Right-click on the line where the new vertex should be added. An existing vertex can also be removed by right-clicking its selection handle.

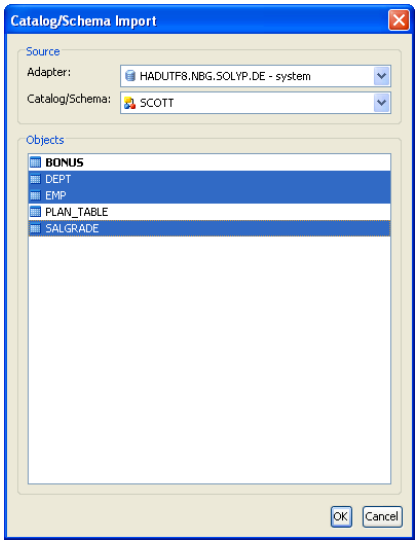
8.2 Commands

Import objects...	Imports tables and views into the current diagram.
Delete	Removes the selected objects from the diagram.
Select all	Selects all objects in the diagram.
Invert selection	Inverts the selection state of all objects..
Grid on/off	Toggles the grid display.
Snap to grid	Toggles the snap to grid behavior..
Preferred size	Changes the size of all selected objects to their preferred size.
Automatic layout	Automatically applies a layout to all diagram objects.
To front	Moves all selected objects into the foreground.
To back	Moves all selected objects into the background.
Foreground color	Changes the foreground color of all selected objects.
Line color	Changes the line color of all selected objects
Background color	Changes the background color of all selected objects
Zoom in	Increases the zoom factor of the view.
Zoom out	Decreases the zoom factor of the view.
100%	Sets the zoom factor to the specified percentage value. Allowed values range from 1% to 1000%.

Fit to selection	Zooms the area of selected objects.
Fit to window	Changes the zoom factor that all objects fit into the visible region of the view.
Zoom 1:1	Sets the zoom factor to 1.
Export as SVG	Exports the diagram to file in SVG (**S**calable **V**ector **G**raphics) format.

8.2.1 Import objects

This function imports tables and views (including their bidirectional references) into the current diagram.



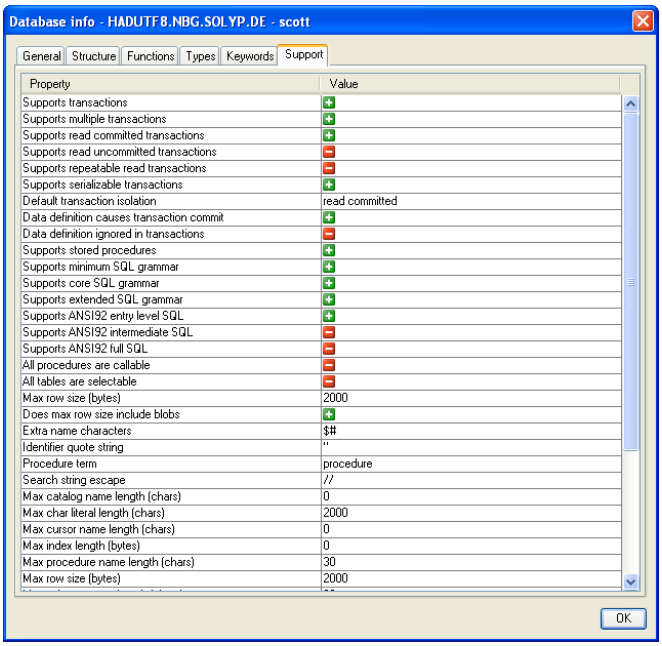
If there is no open database connection yet, at first the *connection dialog* will be displayed where you can select a connection profile or create a new one.

Next, the dialog for importing objects is shown. Select a database and a catalog/schema as the *source* containing the objects to import.

After source selection all tables and views available for import are shown in the lower part of the dialog. If an objects with the same name already exists in the diagram its entry is displayed in bold style. Now select all objects to be import and confirm with *OK*. If you select objects that already exist in the diagram these objects will be updated but keep their position, size and style.

9 Database Info

The *Database Info* dialog shows information about the currently selected database connection like connection parameters, structure, keywords etc.



10 Settings

With the settings dialog you can configure all important application parameters. The dialog is accessible through the *Extras* menu and the *Settings* command.

10.1 General

10.1.1 Connection

Here you can specify a global time limit used by a driver when connecting to a database or executing queries. Whenever a value is set to zero the defaults of the driver are used for the respective parameter.

Note: The settings of the time limit parameters are supported by a few drivers only.

10.1.2 Misc

Use the option *execution of selected text range in SQL statement editor* to control whether a selected text range can be executed (provided that a selection exists) instead of the whole text. If this option is deactivated, statements are always executed completely, no matter whether a selection exists or not.

Select the *Show the tip of the day* option to display the tip of the day window on application start.

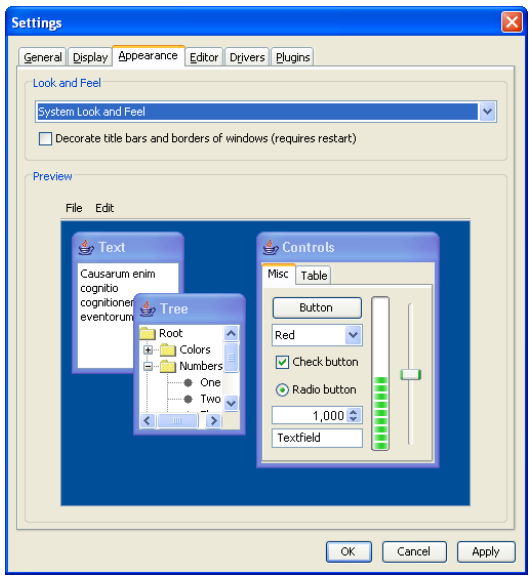
10.2 Display

10.2.1 Desktop

Use this component to configure the desktop. The visibility of the windows bar (below the tool bar) can be controlled with the s*how windows bar* option. Changes applied to this setting only take effect after a restart of SQL Developer. The s*how window contents while dragging* option determines whether a window within the application's desktop is drawn continuously when being dragged. Use the *scrollable desktop* option to show horizontal and vertical scroll bars at the right and bottom border of the desktop whenever a child window exceeds the bounds of the desktop.

10.3 Appearance

10.3.1 Look and Feel



The *Look and Feel* denotes the look and the behavior of the user interface. Here you can select the look and feel SQL Developer should use. The *System Look and Feel* looks like the actual user interface of your operating system and is used by default.

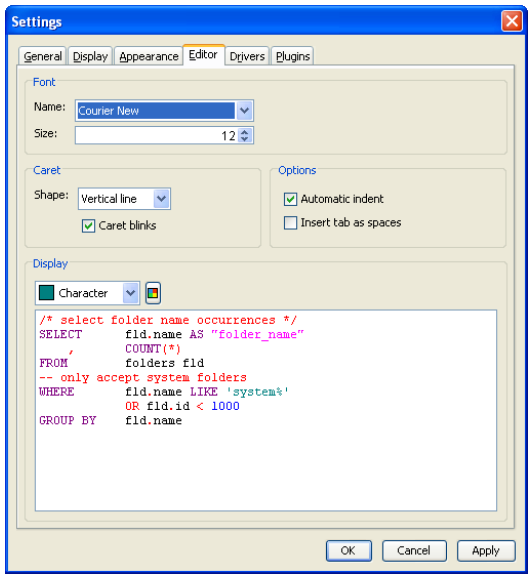
Some Look and Feels also support to *decorate title bars and borders of windows* with the look and feel's style (e.g. the *Metal Look and Feel*).

10.3.2 Preview

The *preview* provides a collection of controls that are changing their look according to the currently selected *Look and Feel*.

10.4 Editor

10.4.1 Font



Here you can configure the family name and size of the font to be used in editor windows.

10.4.2 Caret

You can select between three different shapes for the text caret (insertion mark in text editors): Vertical line, horizontal line or hollow.

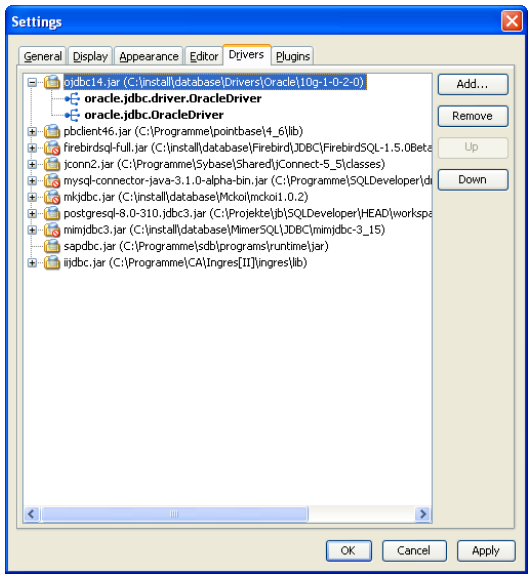
10.4.3 Options

When the *automatic indent* option is selected the text caret is placed with the same indent as the line before after performing a carriage return. To insert blank characters instead of a tab character, activate the *insert tab as spaces* option.

10.4.4 Display

An example statement shows the current color scheme used for syntax highlighting in editor windows. Select a syntax element from the dropdown list and press the attached button to change the color for a certain element.

10.5 Drivers



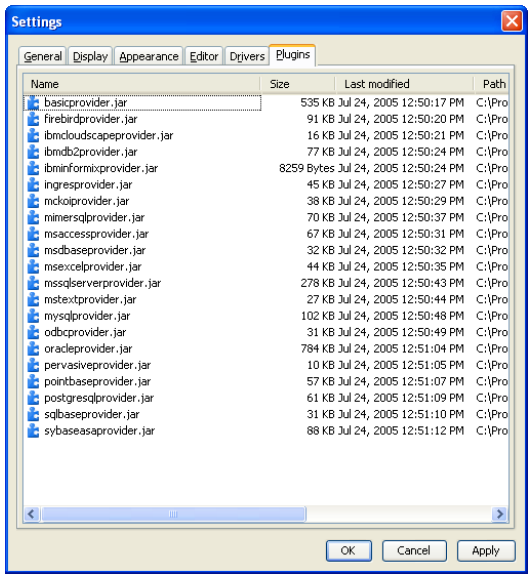
The *Drivers* tab shows a tree with all registered driver libraries SQL Developer can use for establishing connections to a database. Each entry on the first tree level shows a library name and its file path. The child entries on the second level show information about the driver classes provided by the library.

When establishing a connection the tree is searched from top down for the required driver. You can modify the loading priority of a driver by moving its entry using the *Up* and *Down* buttons.

If a driver library can not be accessed (e.g. because the file has been removed) the library icon is marked with a little red symbol.

Note: If you *replace* a driver library with a new version there can occur problems loading the new driver. In this case you should restart SQL Developer to ensure that the new driver will be loaded instead of the old one.

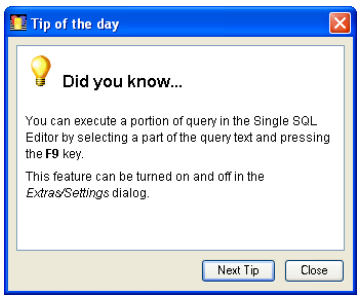
10.6 Plugins



The *Plugins* tab shows all currently loaded auxiliary modules from the *plugins* folder in the SQL Developer installation directory.

11 Tip of the day

After the first start of SQL Developer a dialog opens automatically showing various tips explaining how to work with SQL Developer. Press the *Next Tip* button to change to the next tip.


Tip of the day
Did you know...
You can execute a portion of query in the Single SQL Editor by selecting a part of the query text and pressing the F9 key.
This feature can be turned on and off in the Extras/Settings dialog.
Next Tip
Close

You can open the dialog manually through the *Help* menu and the *Tip of the day* command.

Use the *Setting*s dialog to activate or deactivate the automatic display on application start.

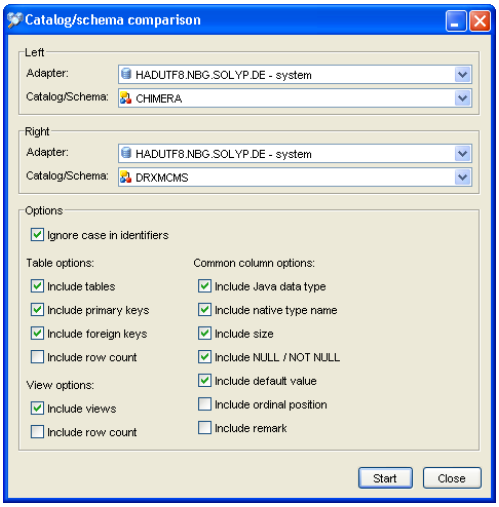
12 Extensions

SQL Developer comes with various *extensions* providing general functions and vendor specific functions. The extensions are accessible through the *Extras* menu.

12.1 Standard extensions

12.1.1 Catalog/Schema Comparison

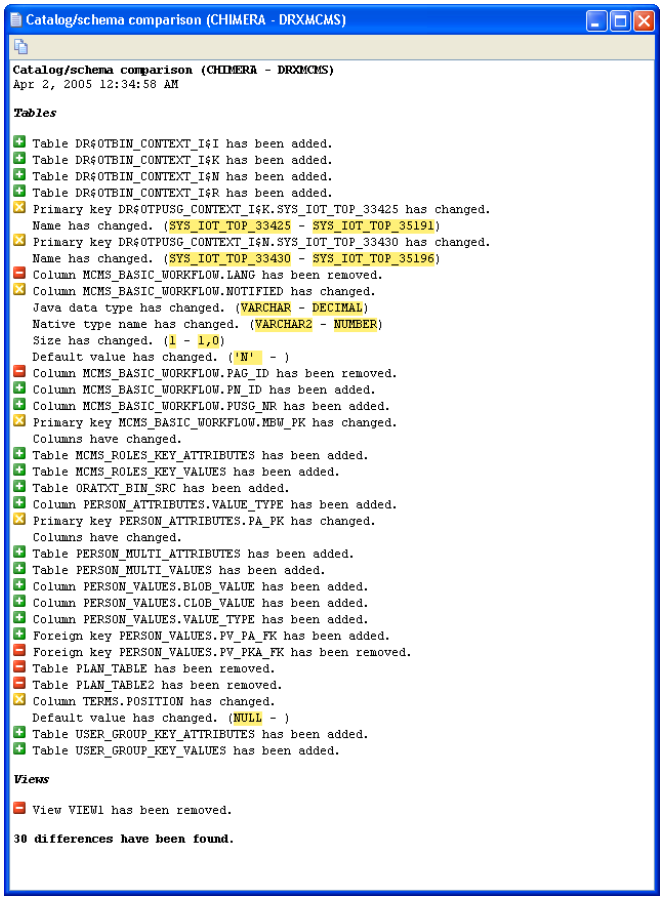
With this extension you can compare the table and view structure of two catalogs or schemas. The comparison always compares a *left* and a *right* side.



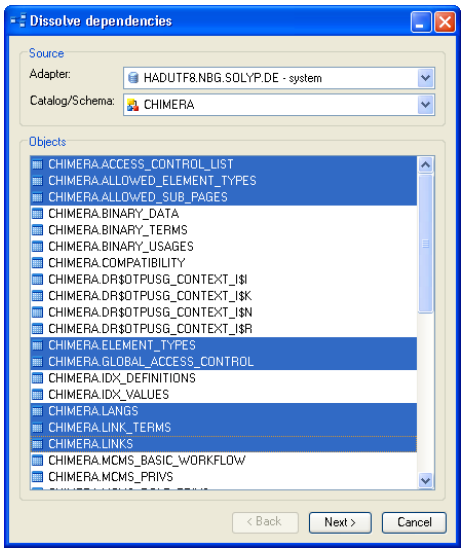
For each side select an adapter and a catalog or schema.

Use the *options* panel to control the properties to compare.

Press *Start* to begin with the comparison. The result will be displayed as a detailed text report.


Catalog/schema comparison (CHIMERA - DRXMCMS)
Catalog/schema comparison (CHIMERA - DRXMCMS)
Apr 2, 2005 12:34:58 AM
Tables
Table DR$OTBIN_CONTEXT_I$I has been added.
Table DR$OTBIN_CONTEXT_I$K has been added.
Table DR$OTBIN_CONTEXT_I$N has been added.
Table DR$OTBIN_CONTEXT_I$R has been added.
Primary key DR$OTPUSG_CONTEXT_I$K.SYS_IOT_TOP_33425 has changed.
Name has changed. (SYS_IOT_TOP_33425 - SYS_IOT_TOP_35191)
Primary key DR$OTPUSG_CONTEXT_I$N.SYS_IOT_TOP_33430 has changed.
Name has changed. (SYS_IOT_TOP_33430 - SYS_IOT_TOP_35196)
Column MCMS_BASIC_WORKFLOW.LANG has been removed.
Column MCMS_BASIC_WORKFLOW.NOTIFIED has changed.
Java data type has changed. (VARCHAR - DECIMAL)
Native type name has changed. (VARCHAR2 - NUMBER)
Size has changed. (1 - 1,0)
Default value has changed. ('N' -)
Column MCMS_BASIC_WORKFLOW.PAG_ID has been removed.
Column MCMS_BASIC_WORKFLOW.PN_ID has been added.
Column MCMS_BASIC_WORKFLOW.PUSG_NR has been added.
Primary key MCMS_BASIC_WORKFLOW.MBW_PK has changed.
Columns have changed.
Table MCMS_ROLES_KEY_ATTRIBUTES has been added.
Table MCMS_ROLES_KEY_VALUES has been added.
Table ORATXT_BIN_SRC has been added.
Column PERSON_ATTRIBUTES.VALUE_TYPE has been added.
Primary key PERSON_ATTRIBUTES.PA_PK has changed.
Columns have changed.
Table PERSON_MULTI_ATTRIBUTES has been added.
Table PERSON_MULTI_VALUES has been added.
Column PERSON_VALUES.BLOB_VALUE has been added.
Column PERSON_VALUES.CLOB_VALUE has been added.
Column PERSON_VALUES.VALUE_TYPE has been added.
Foreign key PERSON_VALUES.PV_PA_FK has been added.
Foreign key PERSON_VALUES.PV_PKA_FK has been removed.
Table PLAN_TABLE has been removed.
Table PLAN_TABLE2 has been removed.
Column TERMS.POSITION has changed.
Default value has changed. (NULL -)
Table USER_GROUP_KEY_ATTRIBUTES has been added.
Table USER_GROUP_KEY_VALUES has been added.
Views
View VIEW1 has been removed.
30 differences have been found.

12.1.2 Dissolve dependencies



This extension retrieves the relational dependencies between tables and views of a catalog or schema.

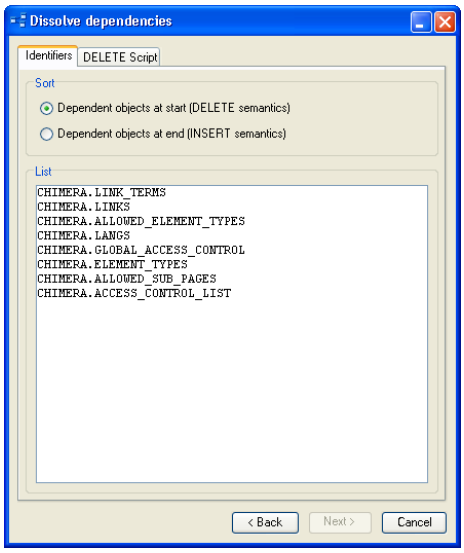
The use cases for this function include the initial data loading into or the complete data removal from the tables of a database without relational constraint violations.

Select the adapter and catalog or schema to examine as the *source*.

After selecting a *source* all accessible tables and views are displayed in the *objects* list. Now you can select the objects to analyze their dependencies for.

Press the *Next* button to start the analysis. A popup window informs about the progress.

The result will displayed in multiple variants:



The *Identifiers* tab shows a *list* of all involved objects. Depending on the selected *sort* option dependent objects are either placed on the top (delete semantics) or at the bottom (insert semantics) of the list.

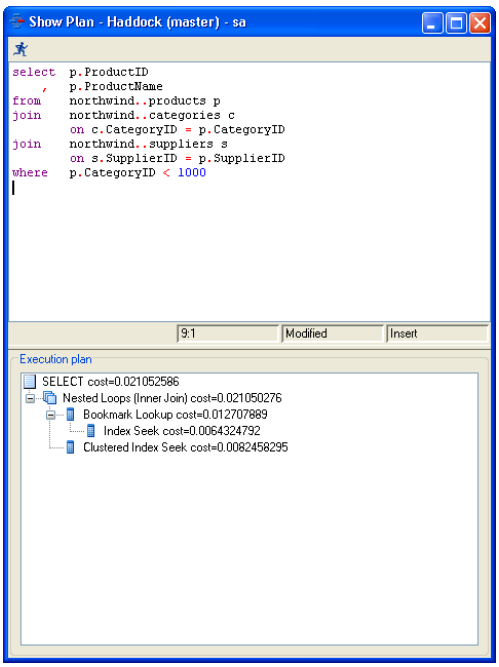
The *Delete Script* tab shows a complete SQL script to delete all data from the tables selected for the analysis. For execution copy the script to the clipboard and paste it to a new or an existing editor script window.

12.2 Microsoft SQL Server extensions

12.2.1 Show Plan

With the *Show Plan* extension you can analyze the execution plan of a query. Paste the statement to analyze from the clipboard into the SQL editor in the upper part of the dialog. You can also load a statement from a file using the *Open* function.

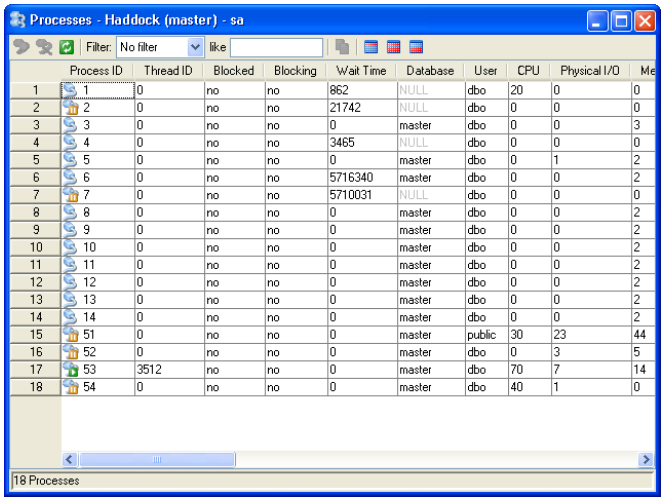
Use the *Execute* button from the tool bar to analyze the statement. The *Execution plan* will be displayed in a tree in the lower part of the dialog.



12.2.2 Processes

This extension shows all processes running on the database for the currently selected adapter.

Use the *Details* button to show the last executed SQL command for the selected process. With the *Kill process* button you can terminate the selected processes. The *Refresh* button re-reads all information of all processes.

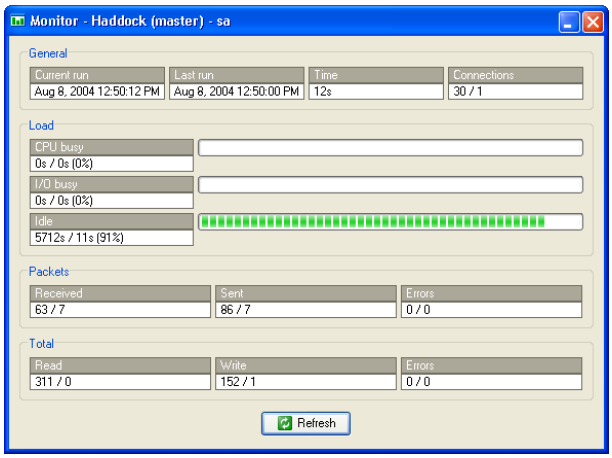

Processes - Haddock (master) - sa
Filter: No filter
like
Process ID | Thread ID | Blocked | Blocking | Wait Time | Database | User | CPU | Physical I/O
1 1 0 no no 862 NULL dbo 20 0 0
2 2 0 no no 21742 NULL dbo 0 0 0
3 3 0 no no 0 master dbo 0 0 3
4 4 0 no no 3465 NULL dbo 0 0 0
5 5 0 no no 0 master dbo 0 1 2
6 6 0 no no 5716340 master dbo 0 0 2
7 7 0 no no 5710031 NULL dbo 0 0 0
8 8 0 no no 0 master dbo 0 0 2
9 9 0 no no 0 master dbo 0 0 2
10 10 0 no no 0 master dbo 0 0 2
11 11 0 no no 0 master dbo 0 0 2
12 12 0 no no 0 master dbo 0 0 2
13 13 0 no no 0 master dbo 0 0 2
14 14 0 no no 0 master dbo 0 0 2
15 51 0 no no 0 master public 30 23 44
16 52 0 no no 0 master dbo 0 3 5
17 53 3512 no no 0 master dbo 70 7 14
18 54 0 no no 0 master dbo 40 1 0
18 Processes

Use the *Filter* field to select a filter criterion and specify a filter pattern in the *like* field. The filter works case insensitive and supports the wildcard character %. Press the *Enter* key or the *Refresh* button to activate the filter.

You can sort the table according to the values of a column by clicking the column's header with the mouse. Another click on the same column header reverses the order.

12.2.3 Monitor

The *Monitor* extension provides a graphical user interface for the internal SQL Server monitor function.

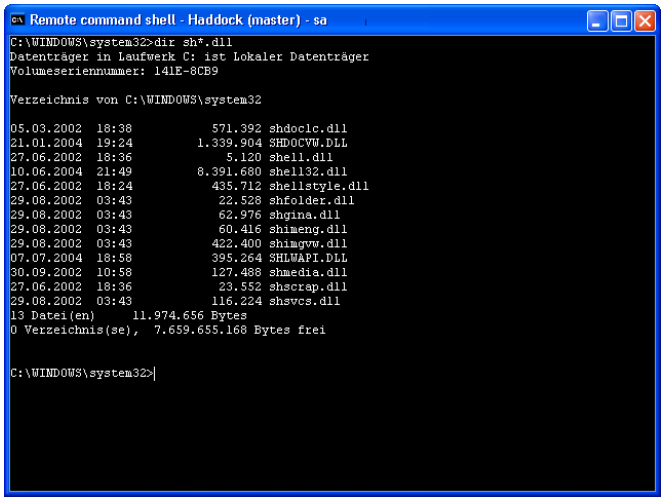


Press the *Refresh* button to update the statistics.

The extension uses the SQL Server function *sp_monitor*. Members of the server role *sysadmin* have the permission to execute this function by default.

12.2.4 Remote command shell

This extension emulates a command shell on the database server. The shell works synchronously. The command control does not return until an executed command has finished. Key input as wanted by some commands is being ignored.

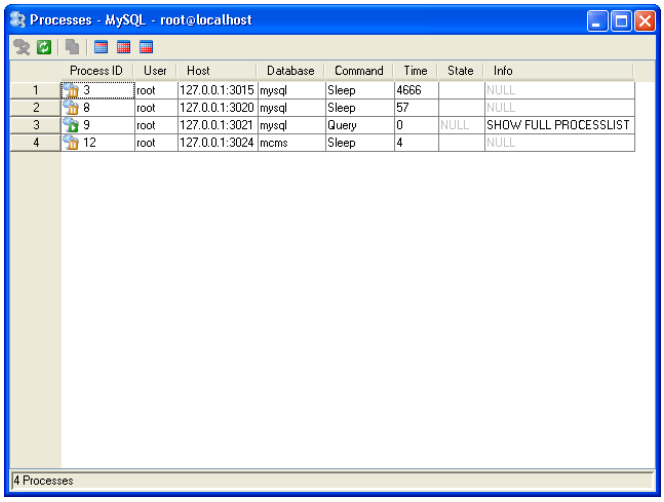

Remote command shell - Haddock (master) - sa
C:\WINDOWS\system32>dir sh*.dll
Datenträger in Laufwerk C: ist Lokaler Datenträger
Volumeseriennummer: 141E-8CB9
Verzeichnis von C:\WINDOWS\system32
05.03.2002 18:38 571.392 shdoclc.dll
21.01.2004 19:24 1.339.904 SHDOCVW.DLL
27.06.2002 18:36 5.120 shell.dll
10.06.2004 21:49 8.391.680 shell32.dll
27.06.2002 18:24 435.712 shellstyle.dll
29.08.2002 03:43 22.528 shfolder.dll
29.08.2002 03:43 62.976 shgina.dll
29.08.2002 03:43 60.416 shimeng.dll
29.08.2002 03:43 422.400 shimgvw.dll
07.07.2004 18:58 395.264 SHLWAPI.DLL
30.09.2002 10:58 127.488 shmedia.dll
27.06.2002 18:36 23.552 shscrap.dll
29.08.2002 03:43 116.224 shsvcs.dll
13 Datei(en) 11.974.656 Bytes
0 Verzeichnis(se), 7.659.655.168 Bytes frei
C:\WINDOWS\system32>

The extension uses the SQL Server function *xp_cmdshell*. Members of the server role *sysadmin* have the permission to execute this function by default.

12.3 MySQL extensions

12.3.1 Processes

This extension shows all processes running on the database for the currently selected adapter.



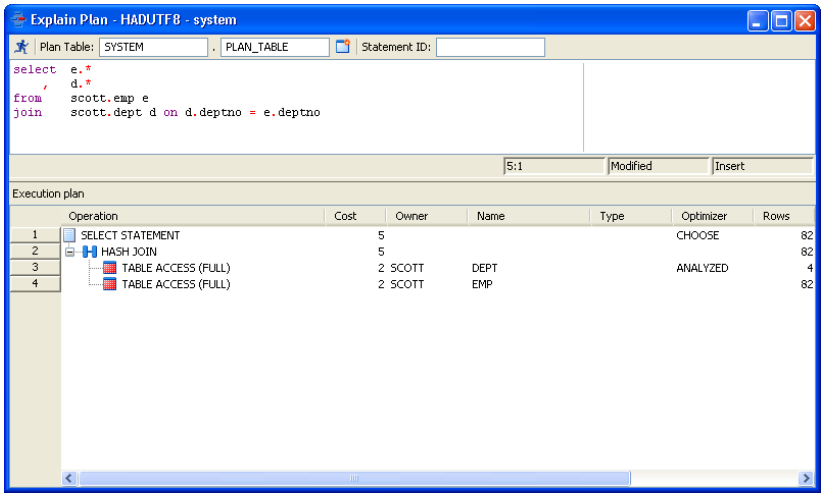
Use the *Details* button to show the last executed SQL command for the selected process. With the *Kill process* button you can terminate the selected processes. The *Refresh* button re-reads all information of all processes.

You can sort the table according to the values of a column by clicking the column's header with the mouse. Another click on the same column header reverses the order.

12.4 Oracle extensions

12.4.1 Explain Plan

With the *Explain Plan* extension you can analyze the execution plan of a query. Paste the statement to analyze from the clipboard into the SQL editor in the upper part of the dialog. You can also load a statement from a file using the *Open* function.


Explain Plan - HADUTF8 - system
Plan Table: SYSTEM . PLAN_TABLE Statement ID:
select e.*
, d.*
from scott.emp e
join scott.dept d on d.deptno = e.deptno
5:1 Modified Insert
Execution plan
Operation Cost Owner Name Type Optimizer Rows
1 SELECT STATEMENT 5 CHOOSE 82
2 HASH JOIN 5 82
3 TABLE ACCESS (FULL) 2 SCOTT DEPT ANALYZED 4
4 TABLE ACCESS (FULL) 2 SCOTT EMP 82

You can specify an optional *ID* for the statement to execute. In this case the query will be stored with the ID in the plan table, otherwise it will be stored as an anonymous query.

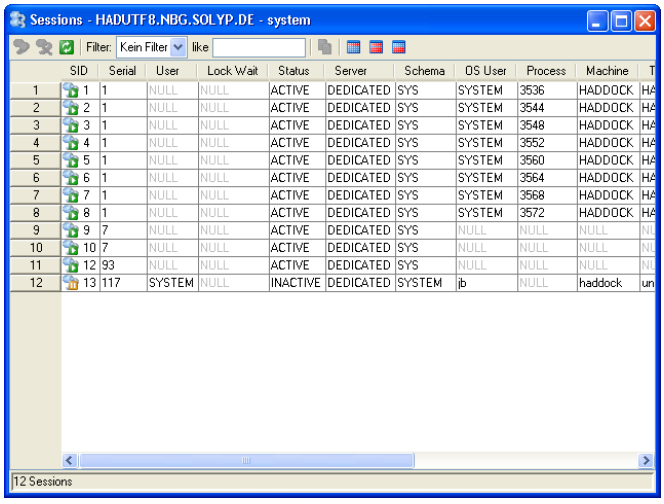
To build an execution plan you need a *plan table*. Please ensure that a plan table exists before the first attempt to build a plan. If no such plan table exists you can create one by using the *Create* button.

Use the *Execute* button from the tool bar to analyze the statement. The *Execution plan* will be displayed in a tree table in the lower part of the dialog.

12.4.2 Sessions

This extension shows all sessions running on the database for the currently selected adapter.

Use the *Details* button to show the last executed SQL command for the selected session. With the *Kill session* button you can terminate the selected sessions. The *Refresh* button re-reads all information of all sessions.

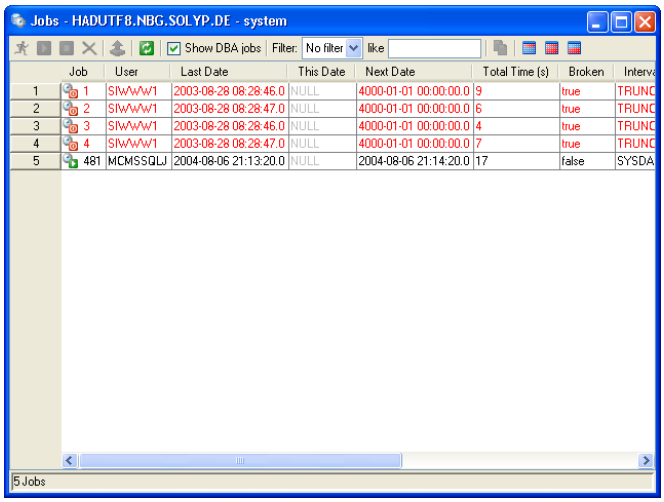

Sessions - HADUTF8.NBG.SOLYP.DE - system
Filter: Kein Filter like
SID Serial User Lock Wait Status Server Schema OS User Process Machine
1 1 1 NULL NULL ACTIVE DEDICATED SYS SYSTEM 3536 HADDOCK
2 2 1 NULL NULL ACTIVE DEDICATED SYS SYSTEM 3544 HADDOCK
3 3 1 NULL NULL ACTIVE DEDICATED SYS SYSTEM 3548 HADDOCK
4 4 1 NULL NULL ACTIVE DEDICATED SYS SYSTEM 3552 HADDOCK
5 5 1 NULL NULL ACTIVE DEDICATED SYS SYSTEM 3560 HADDOCK
6 6 1 NULL NULL ACTIVE DEDICATED SYS SYSTEM 3564 HADDOCK
7 7 1 NULL NULL ACTIVE DEDICATED SYS SYSTEM 3568 HADDOCK
8 8 1 NULL NULL ACTIVE DEDICATED SYS SYSTEM 3572 HADDOCK
9 9 7 NULL NULL ACTIVE DEDICATED SYS NULL NULL NULL
10 10 7 NULL NULL ACTIVE DEDICATED SYS NULL NULL NULL
11 12 93 NULL NULL ACTIVE DEDICATED SYS NULL NULL NULL
12 13 117 SYSTEM NULL INACTIVE DEDICATED SYSTEM jb NULL haddock
12 Sessions

Use the *Filter* field to select a filter criterion and specify a filter pattern in the *like* field. The filter works case insensitive and supports the wildcard character %. Press the *Enter* key or the *Refresh* button to activate the filter.

You can sort the table according to the values of a column by clicking the column's header with the mouse. Another click on the same column header reverses the order.

12.4.3 Jobs

The *Jobs* extension shows all jobs of the current user. If your user account has appropriate permissions you can also show all *All Jobs* of the database instance.



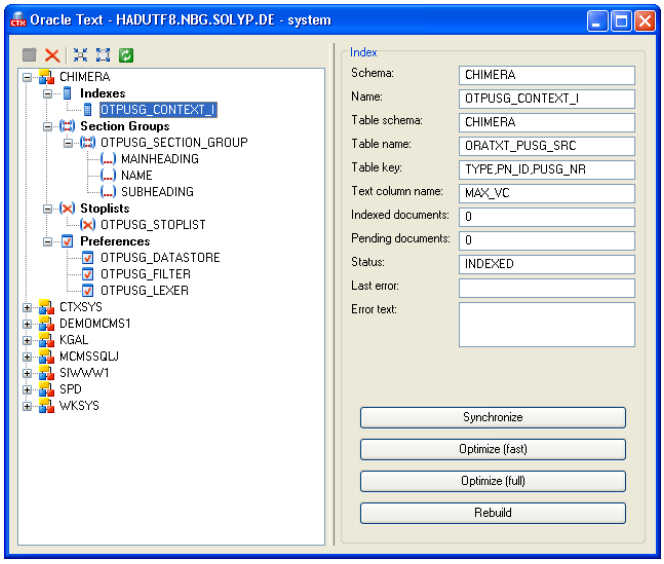
Press the *Run* button to run the selected job directly. Use the *Activate* and *Deactivate* buttons to start and stop a selected job. With the *Extract DDL* button you can generate a creation script for the selected jobs. The *Refresh* button re-reads all information of all jobs.

Use the *Filter* field to select a filter criterion and specify a filter pattern in the *like* field. The filter works case insensitive and supports the wildcard character %. Press the *Enter* key or the *Refresh* button to activate the filter.

You can sort the table according to the values of a column by clicking the column's header with the mouse. Another click on the same column header reverses the order.

12.4.4 Oracle Text

This extension shows information about Oracle Text (a part of Oracle interMedia).



On the left side a tree shows all schemas that are visible to the current user and are using Oracle Text. The child nodes of each schema node show detailed information about indexes, sections, stop word lists and preferences. For indexes there are additional functions available for synchronization, optimization and recreation.

The *Refresh* button re-reads all information in the tree.